

What is claimed is

1. A data transmission system comprising:  
a master unit; and  
a plurality of slave for wirelessly transmitting transmission data to the master unit under TDMA scheme, wherein each of the slave units includes communications means for performing signal transmission and reception with the master unit, and control means for setting, when the communications means does not detect a predetermined signal longer than a predetermined length of time, an own communications channel within the predetermined length of time in a frame to transmit transmission data to the master unit using the communications channel.

2. A data transmission system according to claim 1 comprising:

wherein the control means of each of the slave units transmits identification information to the master unit, and also transmits the transmission data to the master unit after receiving an enabling signal from the master unit, and

wherein the master unit transmits the enabling signal to any of the slave units corresponding to the identification information, when determining that the identification information received from each of the slave units is normal identification information.

3. A data transmission system according to claim 1

comprising:

wherein the control means of each of the slave units transmits the transmission data to the master unit, when receiving the enabling signal in a first reception period of a predetermined time width provided before an information transmission period in which the transmission data is transmitted.

4. A data transmission system according to claim 3 further comprising:

storage means for storing a channel change condition, wherein in a second reception period of a predetermined time width provided after the first reception period or the information transmission period, the control means of each of the slave units changes the communications channel when detecting that the channel change condition previously set in the storage means is satisfied.

5. A data transmission system according to claim 4 comprising:

wherein the channel change condition of the first reception period and that of the second reception period are so set as to be different from each other.

6. A data transmission system according to claim 5 comprising:

wherein the channel change condition is an interference detection frequency in the first reception period and the second

reception period, and as the channel change condition, the interference detection frequency in the first reception period and that of the second reception period are set to each different number.

7. A data transmission system according to claim 4 further comprising:

storage means for storing a channel shift condition, wherein in a third reception period of a predetermined time width provided after the information transmission period, when detecting that the channel shift condition is satisfied, the control means of each of the slave units shifts its own communications channel by a predetermined length of time.

8. A data transmission system according to claim 7 comprising:

wherein the first reception period is so set as to be different from a total length of the second reception period and third reception period.

9. A data transmission system according to claim 4 comprising:

wherein the control means of each of the slave units does not transmit the transmission data to the master unit, when detecting any interference at least in the first reception period.

10. A data transmission system according to claim 1 comprising:

wherein each of the slave units includes a sensor attached

to a body for use and for detecting biometric information about the attaching body, and the control means wirelessly transmits the biometric information detected by the sensor as the transmission data using the communications means, and

wherein the master unit includes communications means for wirelessly receiving the transmission data coming from each of the slave units, and processing means for processing the transmission data received from each of the slave units.

11. A data transmission system according to claim 1 further comprising:

an information processing device for receiving the transmission data from the master unit, wherein the information processing device transmits a synchronizing signal with given cycles, and the master unit includes a reception period synchronous with each of the synchronizing signals for receiving the synchronizing signals in each of the reception periods.

12. A data transmission system according to claim 11 comprising:

wherein the master unit includes storage means for storing at least the identification information, and when receiving the synchronizing signal including the identification information stored in the storage means, the communications means of the master unit sets itself a reception period of a timing synchronous with the synchronizing signal.

13. A data transmission system according to claim 12

comprising:

wherein the communications means of the master unit sets itself the reception period of the timing synchronous with the synchronizing signal, when receiving the synchronizing signal through a time-continuous scanning operation.

14. A data transmission system according to claim 12 comprising:

wherein the communications means of the master unit sets itself the reception period of the timing synchronous with the synchronizing signal, when receiving the synchronizing signal through the scanning operation for a plurality of times with predetermined cycles.

15. A data transmission system according to claim 12 comprising:

wherein the information processing device transmits a data request signal at a timing synchronous with the synchronizing signal, and

the storage means of the master unit includes the transmission data stored therein, and in response to the data request signal received in the reception period, the communications means of the master unit transmits the data stored in the storage means.

16. A data transmission system according to claim 15 comprising:

wherein the information processing device transmits the

synchronizing signal with the predetermined cycle, after receiving from the master unit a data transmission completion signal and transmitting an acknowledgement signal, and

wherein the communications means of the master unit sets itself the reception period synchronous with the synchronizing signal, after transmitting the data transmission completion signal and receiving the acknowledgement signal subsequent to completion of data transmission.

17. A wearable communications device comprising:  
communications means for performing signal transmission and reception with a master unit under TDMA scheme; and  
control means for setting, when the communications means does not detect a predetermined signal longer than a predetermined length of time, an own communications channel within the predetermined length of time in a frame to transmit transmission data to the master unit using the communications channel by the communications means.

18. A wearable communications device according to claim 17 comprising:

wherein the control means transmits identification information to the master unit, and also transmits the transmission data to the master unit after receiving an enabling signal from the master unit.

19. A wearable communications device according to claim 17 comprising:

wherein the control means transmits the transmission data to the master unit, when receiving the enabling signal in a first reception period of a predetermined time width provided before an information transmission period in which the transmission data is transmitted.

20. A wearable communications device according to claim 19 further comprising:

storage means for storing a channel change condition, wherein in a second reception period of a predetermined time width provided after the first reception period or the information transmission period, the control means changes the communications channel when detecting that the channel change condition previously set in the storage means is satisfied.

21. A wearable communications device according to claim 20 comprising:

wherein the channel change condition of the first reception period and that of the second reception period are so set as to be different from each other.

22. A wearable communications device according to claim 21 comprising:

wherein the channel change condition is an interference detection frequency in the first reception period and the second reception period, and as the channel change condition, the interference detection frequency in the first reception period and that of the second reception period are set to each different

number.

23. A wearable communications device according to claim 20 further comprising:

storage means for storing a channel shift condition; wherein in a third reception period of a predetermined time width provided after the information transmission period, when detecting that the channel shift condition is satisfied, the control means shifts its own communications channel by a predetermined length of time.

24. A wearable communications device according to claim 23 comprising:

wherein the first reception period is so set as to be different from a total length of the second reception period and third reception period.

25. A wearable communications device according to claim 20 comprising:

wherein the control means does not transmit the transmission data to the master unit, when detecting any interference at least in the first reception period.

26. A wearable communications device according to claim 17 further comprising:

a sensor attached to a body for detecting biometric information thereabout; and

wherein the control means wirelessly transmits the biometric information detected by the sensor as the transmission

data using the communications means.

27. A data transmission system comprising:

a master unit; and

a plurality of slave for wirelessly transmitting transmission data to the master unit under TDMA scheme, wherein each of the slave units includes a communications circuit for performing signal transmission and reception with the master unit, and a controller for setting, when the communications circuit does not detect a predetermined signal longer than a predetermined length of time, an own communications channel within the predetermined length of time in a frame to transmit transmission data to the master unit using the communications channel.

28. A wearable communications device comprising:

a communications circuit for performing signal transmission and reception with a master unit under TDMA scheme; and

controller for setting, when the communications circuit does not detect a predetermined signal longer than a predetermined length of time, an own communications channel within the predetermined length of time in a frame to transmit transmission data to the master unit using the communications channel by the communications circuit.